

TABLE I

Compositions Showing Effect of Varying Volume Percentages Of Certain Components													
Example	(Comparative) 1		2		3		(Comparative) 4		5		COMMERCIALLY AVAILABLE COMPOUNDS		
	WT	VOL	WT	VOL	WT	VOL	WT	VOL	WT	VOL	ALL	LT.	LT.
	%	%	%	%	%	%	%	%	%	%	PURPOSE "A"	WEIGHT "B"	WEIGHT "C"
Polyvinyl Acetate*	1.8	2.6	1.8	3.1	1.9	3.0	3.1	3.0	3.0	2.9			
"Scotchlite" Glass Bubbles		—		—	0.51	6.0		—		—			
Expanded Perlite		—		—		—	6.6	29.0	7.6	33.8			
Attapulgit	2.65	1.8	0.7	0.5	0.68	0.5	2.1	0.9	1.0	0.4			
Hydroxyethyl-cellulose	0.35	0.8	0.4	0.9	0.12	0.3	0.4	0.6	0.2	0.3			
Calcium Carbonate	50.0	29.9	60.5	34.6	70.0	45.4	27.2	10.6	40.0	16.0			
"Nuosept" 95	0.01	0.0003	0.01	0.0003	0.01	0.0003	0.01	0.0003	0.1	0.0003			
"Tamol" 850	0.55	1.4	0.5	0.9	0.34	0.5	0.5	0.4	0.2	0.2			
Talc	4.5	2.8	4.3	3.1	0	0	5.4	2.0	0	0			
Mica	3.1	1.8	1.5	1.0	1.6	1.0	6.2	2.5	5.9	2.4			
Water	37.1	58.9	30.0	55.8	24.8	43.3	48.7	51.0	41.5	44.0			
Density, g/cc		1.6		1.7		1.8		1.0		1.1	1.7	1.3	1.4

*Supplied as 40% aqueous emulsion; figure reported is actual resin solids, the water being included as part of the separately listed "water"

TABLE II

Physical Properties of Compositions Listed in Table I								
Example	(Comparative) 1	2	3	(Compara- tive) 4	5	COMMERCIALLY AVAILABLE COMPOUNDS		
						ALL	LT.	LT.
						PURPOSE "A"	WEIGHT "B"	WEIGHT "C"
Viscosity, Brookfield RVT with Helipath, Spindle "F", 5 RPM Pa.s	2800	2600	2800	2600	3000	2700	2000	2700
Shrinkage, %	38	23	14	31	10	37	20	31
Diluted yield value, Pa.s	32	8.6	8	35	7.0	52	26	32

Because of their greater density, heavy weight compounds (density of 1.5–2.0 g/cc) require a somewhat greater amount of attapulgit and/or cellulose ethers to prevent sagging than light weight compounds (density in the range of 0.6–1.5 g/cc). In accordance with the invention, however, it has been learned that a total of 1.5 volume percent is adequate for heavy weight compounds having a density of 1.7 and as little as 0.5 volume percent for light weight compounds having a density of 1.0, with up to 1.0 volume percent being preferred where the density is 1.5. In any event, shrinkage is inversely related to the total volume percent of these two ingredients in the compound.

We claim:

1. In a ready-mix tape joint or wall repair compound of the type that hardens by drying comprising particular filler, binder, and water,

the improvement wherein said composition has a diluted yield value no greater than about 15 Pa.s, whereby said composition is readily spreadable and resists sagging but shrinks no more than about 25% upon drying.

2. The compound of claim 1 wherein the diluted yield value is at least 0.5 Pa.s.

3. The compound of claim 1 wherein the viscosity of the compound is on the order of 2,000–3,000 Pa.s.

4. The compound of claim 3 wherein the diluted yield value is on the order of 1–10 Pa.s.

5. The compound of claim 4 wherein shrinkage upon drying is no more than about 20%.

6. The compound of claim 4 wherein shrinkage upon drying is no more than about 10%.

7. The compound of claim 4 wherein hollow glass microspheres make up a portion of the filler solids.

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